
GLOSSARY FOR THE SUPPLEMENTAL IFR/EIS

This glossary defines terms that are specific to the *Supplemental Integrated Feasibility Report for Channel Improvements and Environmental Impact Statement*.

Alevin: The first post-hatch life stage of salmon. Alevins will have some portion of their yolk sac showing on their abdomen. A life stage commonly found only within spawning gravel or hatcheries.

Anadromous: Fish that hatch in fresh water, migrate to seawater as juveniles, and return to spawn in fresh water as adults.

Bathymetry: Topographical (surface) configuration of the riverbed.

Beach nourishment disposal sites: Shoreline fills that replace eroded material. See also shoreline disposal.

Benthic: An environment or habitat related to the bottom of a stream or body of water.

Biological Assessment: Information prepared by, or under the direction of, a Federal agency to determine whether a proposed action is likely to: (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of species that are proposed for listing; or (3) adversely modify proposed critical habitat.

Biological Opinion: A document which includes: (1) the opinion of the U.S. Fish and Wildlife Service or the NOAA Fisheries (National Marine Fisheries Service) as to whether or not a federal action is likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of designated critical habitat; (2) a summary of the information on which the opinion is based; and (3) a detailed discussion of the effects of the action on listed species or designated critical habitat.

Candidate species: Plant and animal taxa considered for possible addition to the list of endangered and threatened species. These are taxa for which the Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposal to list, but issuance of a proposed rule is currently precluded by higher priority listing actions.

Columbia River Datum (CRD): The Columbia River navigation channel elevations are referenced to the Columbia River datum established in the 1930s. The CRD is a local datum based on observed water surface elevations during low discharge-low tide conditions.

Conceptual Model. A graphic diagram designed to visually represent the holistic, complex relationships with a functioning system.

Critical habitat: Under the Endangered Species Act, critical habitat is defined as (1) the specific areas within the geographical area occupied by a federally listed species on which are found physical and biological features essential to the conservation of the species, and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a listed species, when it is determined that such areas are essential for the conservation of the species.

Cubic feet per second (cfs): A unit of measurement pertaining to flow or discharge of water. One cfs is equal to 449 gallons per minute.

Delist: To remove from the federal list of endangered and threatened species because such species no longer meets any of the five listing factors provided under section 4(a)(1) of the ESA and under which the species was originally listed (because the species has become extinct or has recovered).

Endangered species: Any species that is in danger of extinction throughout all or a significant portion of its range, and published in the Federal Register.

Entrainment: The mechanical process by which fish are trapped. During dredging activities, fish may be entrained by the suction of hopper or pipeline dredges.

Epibenthic: Pertaining to the habitat that includes the sediment surface and the overlying one meter of water, or to the organisms that live in this habitat.

Estuary: The transition zone at the mouth of the lower reach of a river where freshwater and seawater mix, and is characterized by a layer of reduced salinity near the surface and a higher salinity layer below. It is the part of the course of a river where its current is met and influenced by the tides.

Estuary turbidity maximum (ETM): An area in the water with very high concentrations of suspended matter. In many estuaries, a turbidity maximum occurs near the leading bottom tidal flow.

Euryhaline organisms: Organisms that tolerate and can live in waters with wide ranges of salinity.

Eutrophic: A stage of aquatic ecosystems characterized by an accumulation of nutrients that support a dense growth of algae and other organisms, the decay of which depletes shallow waters of oxygen, especially in summer.

Evolutionarily Significant Unit (ESU): A distinct population segment of a species that interbreeds when mature, generally genetically distinct from other groups, and representing a significant portion of the evolutionary lineage of the species.

Fingerling: An early freshwater life stage of salmon that are several months old and are about finger size, usually about 40-50 mm (1.5 to 2 inches) in length. Follows fry life stage.

Flowlane disposal: The deposition of dredged material in deep areas of the riverbed in and adjacent to the navigation channel. See also In-water disposal.

Fry: An early life stage of salmon that have emerged from gravel, but still within its first few months of life. Fry are generally about 30-50 mm in length. Follows alevin life stage.

Habitat complexity: The existence of a variety of habitats.

Habitat connectivity and conveyance: The ability to access a habitat.

Habitat forming process: Those physical agents that form landscape features (hydrology, erosion, sediment, temperature, salinity, wind, waves, currents, nutrients, and others).

Habitat opportunity: The ability of salmonids to access habitats.

Intertidal: Characterizing the shoreline zone exposed at low tides and inundated at high tides; also, characterizing the area ecosystem and organisms between extreme low tide and extreme high tide.

In-water disposal: The placement of dredged material along the riverbed in or adjacent to the navigation channel, or in designated sites below low water. Also commonly referred to as flowlane disposal, this practice has been used through out the lower river system for many years. In-water disposal sites vary from year-to-year, depending on the dredging location and river depths available in the vicinity of the dredging action.

Juvenile salmon: Young salmon that have not reached sexual maturity, and generally referring to young salmon that have not yet migrated to the sea or have just entered the sea.

Larva (plural larvae): An immature form of an animal which is unlike the adult body form and that requires fundamental morphological changes before reaching maturity.

Listed species: Any species, including subspecies and distinct vertebrate populations, of fish, wildlife or plant that has been determined to be endangered or threatened under Section 4 of the Endangered Species Act.

Macrodetritus: The decaying remains of multi-celled plants, such as tidal marsh and swamp plants.

Microdetritus: Decaying remains of single-celled plants and organisms, such as phytoplankton and benthic diatoms. Imported microdetritus are the remains of phytoplankton produced upstream that are carried downstream. Resident microdetritus are primarily the remains of phytoplankton produced in the estuary (see phytoplankton).

Nephelometric turbidity unit (NTU): Measurement of turbidity using a nephelometer that measures the size and concentration of particles in a liquid by analysis of light scattered by the liquid.

Ocean type: A life history designation for salmon that spend only a brief period (weeks to several months) rearing in freshwater and the estuary before they migrate to sea, as contrasted to stream-type salmon that spend at least one winter in freshwater before migrating directly to the ocean.

Phytoplankton: Single-celled plants suspended in the water column. Phytoplankton serve a vital role as the base of the food web on which zooplankton, benthic fauna and epibenthic organisms feed. Phytoplankton are termed imported if they have been produced behind the mainstream dams, or resident if they are produced within the lower river.

Pile dike: A structure consisting of two parallel rows of piling that are tied together and extend into the river.

Plankton: The collection of small or microscopic organisms, including algae and protozoans, that float or drift in great numbers in fresh or salt water, especially at or near the surface, and serve as food for fish and other larger organisms.

Salinity: The relative proportion of salt in a solution, such as water.

Salinity gradient: The variable rate of increase or decrease of the ratio of salinity to freshwater.

Salinity intrusion: The movement of saltwater into freshwater.

Salmonid: Fish belonging to the family salmonidae, including salmon, trout, char and allied freshwater and anadromous fish.

Section 7 consultation: The various Section 7 processes of the Endangered Species Act, including both consultation and conference if proposed species are involved.

Sediment deposition or erosion: The adding (deposition) or removal (erosion) of sediments to an area by some transporting agent, such as wind or water.

Sediments: The organic and inorganic particulate materials, including gravel, sand, silt and clay, that cover the bottom of water bodies, including river and tributaries bottoms, estuary bottoms, and intertidal areas.

Shoreline disposal: Material that is dredged and pumped into shallow water and beach areas along the river. Shoreline disposal is done primarily with pipeline dredges.

Side-slope adjustment: The bedload movement is generally directed down stream, but there can be a small displacement towards deeper water caused by the side-slopes of the riverbed. This displacement is larger on steeper side-slopes.

Smolt: A life stage of salmon that is undergoing or has completed the physiological transition that allows it to live in seawater. Commonly involves changes in body form to a slightly more streamlined shape and silvery body coloration.

Smoltification: Physiological transformation process young anadromous fish undergo that allows them to move from freshwater to seawater.

Suspended sediments: Soil particles that remain suspended in water due to the upward forces of turbulence and currents, and/or colloidal suspension.

Take: To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. Harm is defined by the U.S. Fish and Wildlife Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering.

Threatened species: Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Turbidity: Reduced water clarity resulting from the presence of suspended matter; also, the amount of particulate matter suspended in water.

Upland disposal: Depositing dredged material on a site that is elevated, dry land. Upland disposal sites are designed as holding ponds, with earthen dikes to contain the dredged material and hold the sand while allowing sand and suspended material to settle. Weirs are used to regulate the return of water from the piped slurry to the river.

Zooplankton: The group of small (usually microscopic) passively suspended or weakly swimming animals in the water column.